

ABSTRACT OF THE DISCLOSURE

A method of producing semiconductor devices is provided, which makes it possible to bury a silicon oxide
5 without shape deterioration in device isolation trenches. The method comprises the steps of: forming an etching resistive mask over a semiconductor substrate; etching the semiconductor substrate through an opening in the etching resistive mask to form a device isolation trench; forming a
10 coat of a silazane perhydride polymer solution over the semiconductor substrate having the device isolation trench formed therein; vaporizing a solvent from the coat and then subjecting the coat to chemical reaction to form a film of silicon oxide; removing said film of the silicon oxide
15 leaving a residue inside said device isolation trench; and heating said silicon oxide left in said device isolation trench for densification.